

## Land-based Research:

### Cape Shirreff

1. A four-person field team (M. Goebel, J. Lyons, I. Saxer and D. Scheffler) arrived at Cape Shirreff, Livingston Island, on 14 November 2001 via the R/V *Nathaniel B. Palmer*. Equipment and provisions were also transferred from the R/V *Nathaniel B. Palmer* to Cape Shirreff.
2. Two additional personnel (R. Holt and B. Parker), along with supplies and equipment, arrived at Cape Shirreff via the R/V *Yuzhmorgeologiya* 16 January 2002. One person (W. Trivelpiece) arrived at Cape Shirreff on 5 February 2002 following the completion of the South Shetland Island fur seal pup survey.
3. The annual census of active gentoo penguin nests was conducted on 23 and 24 November 2001, and a similar census of chinstrap penguin nests was completed on 29 November and 1 December 2001. Reproductive success was studied by following a sample of 100 chinstrap penguin pairs and 50 gentoo penguin pairs from egg laying to crèche formation.
4. Radio transmitters were attached to 19 chinstrap penguins in the first week of January 2002 and remained on until their chicks fledged in late February 2002. These instruments were used to determine foraging trip duration during the chick-rearing phase. All data were received and stored by a remote field computer set up at the bird observation blind.
5. Ten satellite-linked transmitters (PTT's) were deployed on adult chinstrap penguins feeding chicks in late January to coincide with the time when the annual AMLR 2001/02 marine survey was adjacent to Cape Shirreff during Leg I. Four PTT's were deployed on gentoo penguins in mid-February to coincide with the AMLR near-shore hydroacoustic survey off Cape Shirreff.
6. Diet studies of chinstrap and gentoo penguins during the chick-rearing phase were initiated on 6 January 2002 and continued through 18 February 2002. Chinstrap and gentoo adult penguins were captured upon returning from foraging trips, and their stomach contents were removed by lavaging.
7. Counts of all gentoo penguin chicks were conducted on 20 January and 3 February 2002, and for chinstrap penguin chicks on 8 and 9 February 2002. Fledging weights of 256 chinstrap penguin chicks were collected between 15 and 23 February 2002. Two hundred gentoo penguin chicks were also weighed on 25 January and 7 February 2002.
8. Five hundred chinstrap penguin chicks and 200 gentoo penguin chicks were banded for future demographic studies.

9. Reproductive studies of brown skuas and kelp gulls were conducted through out the season at all nesting sites around the Cape.
10. Time-depth recorders (TDRs) were deployed on 8 chinstrap penguins for 10-12 days in mid-January to coincide with the marine sampling offshore at Cape Shirreff at the end of Leg I and beginning of Leg II.
11. Antarctic fur seal pups and female fur seals were counted at four main breeding beaches every other day from 18 November 2001 through 10 January 2002.
12. Attendance behavior of 28 lactating female Antarctic fur seals was measured using radio transmitters. Females and their pups were captured, weighed, and measured from 4-15 December 2001.
13. U.S. researchers assisted Chilean scientists in collecting data on Antarctic fur seal pup growth. Measurements of mass, length, and girth for 100 pups were begun on 16 December 2001 and continued every two weeks until 1 March 2002.
14. Information on Antarctic fur seal diet was collected using three different methods: scat collection, enemas of captured animals, and fatty-acid signature analyses of milk.
15. Twenty-four Antarctic fur seals were instrumented with time-depth recorders (TDR's) for diving behavior studies.
16. Thirteen Antarctic fur seal females were instrumented with ARGOS satellite-linked transmitters for studies of at-sea foraging locations from 23 December 2001 to 17 February 2002.
17. Four hundred and ninety-nine Antarctic fur seal pups were tagged at Cape Shirreff by U.S. and Chilean researchers for future demography studies.
18. A weather data recorders (Davis Instruments, Inc.) were set up at Cape Shirreff for wind speed, wind direction, barometric pressure, temperature, humidity, and rainfall.
19. A single post-canine tooth was extracted from 77 tagged female fur seals for aging and demography studies. Studies of the effects of tooth extraction on attendance and foraging behavior were initiated.
20. One team member (M. Goebel) left Cape Shirreff via the R/V *Yuzhmorgeologiya* on 30 January 2002.
21. The Cape Shirreff field camp was closed for the season on 10 March 2002; all U.S. personnel (R. Holt, W. Trivelpiece, B. Parker, I. Saxer, D. Scheffler and J. Lyons), garbage, and equipment were retrieved by the R/V *Yuzhmorgeologiya*.